

**TESTIMONY OF DR. ELIZABETH DOWNIE
DIRECTOR, DAYTON AREA GRADUATE STUDIES INSTITUTE
BEFORE THE SUBCOMMITTEE ON FEDERALISM AND THE CENSUS
COMMITTEE ON GOVERNMENT REFORM
UNITED STATES HOUSE OF REPRESENTATIVES**

***“THE AIR FORCE INSTITUTE OF TECHNOLOGY: AN
INTERGOVERNMENTAL MODEL FOR TODAY’S MILITARY EDUCATION”***

JULY 29, 2006

INTRODUCTION

Good morning, Mr. Chairman and members of the Subcommittee. My name is Elizabeth Downie. I am the Director of the Dayton Area Graduate Studies Institute, or DAGSI, and I am here to testify about the DAGSI consortium and AFIT’s role and impact as a partner of the consortium. I appreciate the opportunity to speak before you today.

OVERVIEW

The Dayton Area Graduate Studies Institute (DAGSI) is a not-for-profit consortium of graduate engineering and computer science schools at the University of Dayton, Wright State University, and the Air Force Institute of Technology. The consortium is unique in that it unites a private institution, a state-assisted institution, and a federal institution in a successful partnership that has enhanced the educational and research base as well as the technical

workforce in the region. Our impact is not limited to Dayton, however. The University of Cincinnati, The Ohio State University, Miami University, and Ohio University are affiliated with DAGSI, and our major research program, which supports the Air Force Research Laboratory, is open to any Ohio research university. DAGSI's mission is to promote education-based economic development in Ohio through the development and support of world-class graduate engineering and computer science education and research programs.

DAGSI has been funded by the state of Ohio, through the Board of Regents, since 1995. DAGSI's funding supports student and faculty research in technologies aligned with several initiatives critical to the future of Ohio and its economy. We have two major program areas:

- First, we offer competitive, merit-based scholarships and fellowships to Masters and Doctoral students in engineering and computer science at UD, Wright State, and AFIT. We support part-time as well as full-time students, which means that employers in the region can leverage their education and training dollars by having their engineers pursue a graduate degree through DAGSI. Most of our students are Ohio residents when they apply for a scholarship, but we also are drawing students from across the nation, particularly through our Fellowship program. Typically we support close to 200 students annually.
- Second, we sponsor a joint research program between DAGSI and the Air Force Research Laboratory (AFRL) at Wright-Patterson AFB. Each year,

AFRL provides DAGSI with research topics, and students and faculty from any Ohio research university may submit proposals for research on these topics. Students who are awarded a research fellowship are required to work on base in the AFRL labs; therefore, they must be US citizens. Currently we have 40 active projects in this program.

DAGSI's key objectives are:

- To train and retain advanced engineering students in the state of Ohio, with the goal of creating a critical mass of talent in targeted technologies
- To fund graduate students who study and undertake research in areas critical to Ohio's future
- To work collaboratively with research institutes, private and government laboratories, corporations, and others seeking to build Ohio's capabilities in key technology focus areas

THE VALUE OF DAGSI

Let's look at several aspects of DAGSI and its programs in terms of the value brought by the consortium to various stakeholders. In particular, I will focus on AFIT's participation in the consortium as well as the impact of DAGSI on the Air Force to illustrate the successes of the program.

1. Through DAGSI and our Cooperative Research and Development Agreement (CRADA) with AFIT, civilian students now can enroll at AFIT. Over the years, 37% of DAGSI students at AFIT have been non-

government students. These students, who would be in school elsewhere if not for DAGSI, do research that ultimately supports the warfighter. In DAGSI's elite Fellowship program, AFIT has attracted an impressive 10 of the 26 students enrolled to date—all civilian students with exceptional academic and research credentials who have chosen to pursue their doctoral studies at AFIT and contribute to the warfighter.

2. Through DAGSI, engineering or computer graduate students enrolled at AFIT, UD, or Wright State can cross-register for classes at the other partner schools. This capability broadens and enriches the students' programs of studies and builds in collaboration. It also affords opportunities to streamline course offerings to minimize repetition among the three schools. Many AFIT students have taken classes at UD and Wright state over the years, and many UD and Wright State students—those who are US citizens—have taken classes at AFIT. Also, AFIT faculty have served as dissertation committee members for UD and Wright State students, and likewise AFIT students have had committee members from the other schools.

Here is what one student, now an aerospace engineer employed by the Air Force, has to say about opportunities arising from consortium collaboration: "DAGSI's relationship allowing the three Dayton-area graduate schools to cross-enroll has been the only way I would have been able to complete my degree in my field, because none of the three schools

alone offered classes necessary for my major. With DAGSI's help, I've been able to craft a program that is unique but valuable to my employer, the USAF."

3. Twenty-six percent of DAGSI's scholarship awards have gone to students connected with the Air Force when they start their graduate program and employed by the Air Force when they graduate. Most are at Wright-Patt, so DAGSI has had a tremendous impact on the educational programs at Ohio's largest single-site employer.
4. Nearly two-thirds of DAGSI graduates are employed in Ohio, contributing to the economy with their technology knowledge and skills. Close to 40% of these are employed at Wright-Patt or by defense contractors in the region.
5. DAGSI has sponsored 93 projects in the AFRL/DAGSI research program since the program's inception 7 years ago. In addition to the seven DAGSI members and affiliates, several other Ohio universities--Case Western, Kent, Toledo, and Akron--have had teams funded through this program. AFIT faculty and students collaborated in 35 of these projects (that's 38% of the total), 14 as the lead institution and 21 as a partner. Clearly AFIT has been a vital contributor to university research collaborations across the state of Ohio. This program not only has benefited AFRL by effectively expanding the lab's research base and tying it to the university community in Ohio, it has fostered collaboration among individual faculty members from different institutions. Many of these

collaborations have continued after getting their start in our program, with follow-on funding obtained from the Air Force and other government agencies. Faculty early in their careers at AFIT as well as the other schools have been able to build a research base with colleagues in the region, leading to a positive impact on tenure decisions.

CLOSING

DAGSI is a model of collaboration that we believe others can look to for replication. Through the success and contributions of our graduates, DAGSI's impact reaches far beyond the universities themselves. Thank you for providing this opportunity to give you my perspective on DAGSI and AFIT's role as an integral, vital member of the partnership.

DAYTON AREA GRADUATE STUDIES INSTITUTE (DAGSI) IMPACT ON OHIO'S ECONOMY

DAGSI is a consortium of graduate engineering and computer science schools at the University of Dayton, a private institution; Wright State University, a state-assisted institution; and the Air Force Institute of Technology, a federal institution. DAGSI integrates and leverages the combined resources of the partnership, including faculty, facilities, equipment, and other assets of the institutions. The DAGSI partnership, which includes The Ohio State University and the University of Cincinnati as affiliate members and Miami University as an associate member, effectively expands regional educational and research opportunities at the masters and doctoral levels of engineering and computer science. **DAGSI's ultimate objective is to support economic growth and development in Ohio by strengthening the intellectual infrastructure supporting the state's high-tech workforce.**

Third Frontier initiatives, the Wright Brothers Institute, and the workforce needs of Ohio industry, including Wright-Patterson AFB, all demand strength in graduate engineering and computer science education. DAGSI should be funded at a level that allows our educational, government, and industry partners to develop the talent pipeline critical to the future of Ohio.

DAGSI SCHOLARSHIP PROGRAM REGENTS LINE 235-553

IMPACT: WORKFORCE DEVELOPMENT FOR OHIO

- Over 500 DAGSI students have graduated with advanced degrees in engineering and computer science since 1996
- Close to two-thirds of the graduates remain in Ohio for employment
- DAGSI graduates work for Delphi, Lexis Nexis, Riverside Research, UDRI, UES, Anteon, and many other Ohio companies
- At least 4 DAGSI graduates have started their own companies – in Ohio
- 26% of DAGSI graduates work for Air Force organizations connected with Wright-Patterson AFB
"DAGSI is a tool for recruiting students. We have several who have come (to AFRL) because of the combination of DAGSI scholarships, the benefit of choosing classes between member institutions, and doing quality research with us." Bill Brown, Chief Scientist, SN Directorate, AFRL
- 75% of DAGSI graduates have degrees and experience directly relevant to Third Frontier technologies: bioscience; information technology; power and propulsion; advanced materials; instruments, controls, electronics

THE JOINT AFRL/DAGSI RESEARCH PROGRAM REGENTS LINE 235-508

IMPACT: WORKFORCE DEVELOPMENT

New talent and skills for high-tech jobs in Ohio:

- At least 17 MS and PhD graduates involved with the program now work for AFRL
- At least 8 graduates now work for Air Force contractors
- Other students employed by Battelle, Systran, Sverdrup, GE, and others

IMPACT: RETURN ON INVESTMENT

Positive ROI:

- More than \$18 million in follow-on funding to date; is new money to the state of Ohio
- Total project value of \$32 million far exceeds the investment by the state of Ohio

IMPACT: KNOWLEDGE DEVELOPMENT

Progress critical to Air Force and the warfighter:

- Program provided AFRL the opportunity to leverage resources and move forward aggressively with fundamental research
- At least 12 projects have received follow-on funding from the Air Force
- Strategic center of excellence established: AFRL/VA-AFOSR Collaborative Center for Control Science, headquartered at OSU
 - *"If it hadn't been for the team's start under the DAGSI program, the award for this center very likely would have gone to Michigan rather than to OSU." Don Paul, Chief Scientist, Air Vehicles Directorate*
 - *"Center for Control Science with Ohio State is a model for activities of this kind." AFRL Scientific Advisory Board Review, VA Directorate, 11/03*
- Collaborations established among teams representing 10 Ohio universities, AFRL scientists and engineers, and several Ohio companies. Over 300 faculty and student publications and presentations to date; more than 150 graduate theses completed or in process

Air Force Institute of Technology (AFIT)

- DAGSI was instrumental in turning around the Air Force decision to close AFIT, resulting in significant economic impact to southwest Ohio.
- Loss of AFIT would have meant a loss of \$100 million to the Dayton region in 2004 and greater potential loss in the future (\$150 million in lost wages by FY07)

Event: Air Force proposes closing AFIT (12/96)

- Negative economic impact (military and civilian): approx. \$62 million/year
 - 350 faculty and staff positions lost (\$30 million/year)
 - 400 officer students lost (\$32 million/year)

Response: DAGSI members and community leaders develop plan (1/97)

- Proposal submitted to Air Force for DAGSI consortium to manage AFIT
- Air Force delayed closure and agreed to consider proposal

Result: Year-long reassessment convinces Air Force to maintain AFIT as an Air Force organization (1998)

NOW: AFIT is vibrant and growing

- Over 400 faculty and staff positions (\$42 million/year)
- Over 700 full-time officer students (\$56 million/year)

FUTURE: By FY07, AFIT plans to have over 500 faculty and staff positions (\$50 million/year) and about 1200 full time students (\$96 million/year)

DAGSI'S FUNDING CHALLENGE

Total DAGSI program funding for FY07 is 50% of what it was in FY01. Tuition has risen at an average rate of 8% per year. DAGSI faces a major cutback in programs by FY08 unless funding from the state increases significantly or other sources of funding are identified.

